REMARKS

In the Office Action, the Examiner rejected claims 1 - 7 as anticipated by the

Takahara et al. reference, rejected claims 8 and 9 as anticipated by the **Josephson** et al.

reference. Additional references are cited by the Examiner on the form PTO-892 but not

mentioned in the action.

35 USC 102(b)

The U.S. Patent No. 5,381,158 to **Takahara** et al. discloses an information retrieval

apparatus as a virtual reality system with a three dimensional display depicting information as

capsule images in three dimensional space. The capsules are in shapes such as rectangular

cards, barrels, oblate spheres and spherical capsules. A user wearing a data glove interacts

with the information capsules in the three dimensional space, such as by holding, moving and

flipping the capsules. The capsules are of different sizes to represent the quantity of

information contained therein. The capsule images may be moved in various motions in the

virtual space to access information along a time axis. The capsules may also be displayed on a

flat display such as a CRT.

The present invention is not an information retrieval system combined with a virtual

reality apparatus as disclosed in the Takahara reference but instead is an information

extraction and/or discovery software with an embedded three-dimensional graphical interface.

It uses data mining techniques for extraction of knowledge from data.

The prior art of Takahara performs only information retrieval and does not create or

discover new information and knowledge. The present invention performs information

extraction and does create and/or discover new information and/or knowledge.

The present invention provides a method and a computer program, not virtual reality hardware.

The present invention does not detect motion patterns of user's body but it does use, for example, a standard computer input (keyboard and mouse) to interact with depicted objects.

The present invention does not require the user to don gloves and goggles.

The present invention does not display a set of indexes controlling attributes of the database. It uses data mining techniques for knowledge extraction and/or discovery.

In particular, the following table sets out the differences over the prior art.

Table 1. Additional Information

	U.S. Patent No. 5,381,158	U.S. Serial No.: 10/617,054
The improvement	A Virtual Reality[1] Apparatus that includes hardware, goggles, and corresponding computer programs for <u>information retrieval.</u>	A graphical user interface combined with data mining <u>for rendering knowledge depictions</u> and implemented as the software program.
	<u>Definition for Apparatus:</u> A set of materials or equipment designed for a particular use.	<u>Definition for GUI:</u> A graphical user interface is a method of interacting with a computer through a metaphor of direct manipulation of graphical images and widgets in

---

[1] *An artificial environment created with computer hardware and software and presented to the user in such a way that it appears and feels like a real environment. To "enter" a virtual reality, a user dons special <u>gloves, earphones, and goggles,</u> all of which receive their input from the computer system. In this way, at least three of the five senses are controlled by the computer. In addition to feeding sensory input to the user, the devices also monitor the user's actions. The goggles, for example, track how the eyes move and respond accordingly by sending new video input (From: dtp.epsb.net/glossary.htm)*

		addition to text.
How It Works	The use of a virtual reality environment with detection of motion patterns of user's body for information retrieval. User's interactions within the virtual reality environment retrieve and collate information from the database. The arithmetic operation unit performs set logical operations (no data mining) on the retrieved information.	The use of data mining for generation of knowledge representations followed by their graphical depictions. The visualization component displays the rules as spherical graphical objects. Each sphere essentially represents a rule. The spheres are displayed in a spiral fashion, with the rule having the highest strength in the center and the rules with the least strength as outliers. This arrangement is so chosen since this process is intuitively analogous to the standard clustering process with the cluster centers in the center. The size of the sphere represents the number of examples covered by that rule during learning.

The claims of the present application have been amended to more distinctly claim the invention. In claim 1, data mining is performed to generate rules. The strength of the rules bears on the position of the rules displayed in a group. The objects corresponding to the rules are displayed on a graphical user interface. In claim 1, the rules are spheres that are displayed in a spiral. In claim 10, the computer input apparatus is a keyboard and mouse-like apparatus. This can include a computer mouse, roller ball, touch pad, pointer stick, joystick, or any number of other pointer moving and/or selecting devices. In claim 12, the lesser strength rules are displayed in outer portions of the spiral structure. In claim 13, the classes of rules correspond to different groups of objects. In claims 14 and 15, the raw data is displayed,

7

preferably on a graph. In claim 16, the walls and floor of the three-dimensional space can be selectively displayed. In claim 17, the data mining is performed by an inferencing engine. In claim 18, a software program is provided.

Thus, the present invention as defined in the claims is distinguished from the cited reference. Further, the present invention represents a non-obvious improvement over the prior art. As such, reconsideration and withdrawal of the section 102(b) rejection is hereby requested.

The **Josephson** patent disclosures a visualizer for presenting a view of a design space which diagrams design candidates. The reference teaches filters. Applicant submits that the claims are not anticipated by the reference. In particular, claim 8 provides that objects generated for display and representing rules obtained by data mining in a database are grouped according to rule class and positioned within a group according to rule strength; and that filtering is performed to filter out rules of lesser strength from said display of objects. The filtering includes the sub-steps claimed. This is not shown or suggested in the cited art. Withdrawal of the rejection is therefore requested.

Additional Art

The additional art cited by the Examiner is noted by the Applicants.
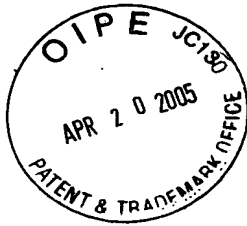
Conclusion

Applicants respectfully request favorable reconsideration and allowance of the present application in view of the foregoing.

Respectfully submitted,

Melvin A. Robinson (Reg. No. 31,870)
Schiff Hardin LLP
Patent Department
6600 Sears Tower
Chicago, Illinois 60606
Telephone: 312-258-5785
CUSTOMER NO. 26574
ATTORNEY FOR APPLICANT

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail addressed to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

on April 18, 2005.

CHI\ 4246123.1

9